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## EDMONSON COUNTY

### (Edmonson County Water Service Area Map)

- Estimated 1999 population of 11,500 -- 95% on public water
- Estimated 2020 population of 13,600-- 96% on public water
- 310 miles of water lines, with plans for 10 additional miles
- Estimated funding needs for public water 2000-2005--\$3,198,000
- Estimated funding needs for public water 2006-2020--\$5,300,000

Edmondson County had an estimated population of 11,494 (4,635 households) in 1999, with a projected population of 13,574 (5,913 households) by the year 2020. The need for water service expansion in rural Edmonson County is not as great as in other counties because in the service area of the Edmonson County Water District approximately 95% of the households have treated water available to them. Those not on public water relied on private wells. About 40 new households will be placed on public water through line extensions in 2000-2020.

The only areas lacking adequate water service are those areas located on the outer edge of the county where there are too few residents per square mile to justify the cost of expansion to these areas. Some of the things that are being done or are being planned include upgrading the Brownsville treatment plant, which is currently operating at about 70% of its rated capacity. Although it would probably be sufficient until the year 2020, the District does not want to take a chance on having problems in the future. Other things the District is doing to improve service include putting in new water lines where the new highway is being built in Brownsville and also extending lines to the site of the new school that is to be completed in the next two years. The Edmonson County Water District plans to add three tanks to the Edmonson County area, one tank to Grayson County, and one to Hart County. These combined efforts should easily carry them into the next twenty years.

Edmonson County has 8,342 service connections and 1,150,000 gallons per day treatment capacity. Total storage capacity is 3,950,000 gallons. The costs for the first 5,000 gallons are \$22.05, operating and management costs per service connection range are \$145 and average system losses are 11.5% for the system that reported.

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# WATER SERVICE AREAS

## EDMONSON COUNTY

### Kentucky

*Prepared By:*  
**Water Resource Development Commission**

Department for Local Government  
1024 Capital Center Drive, Suite 340  
Frankfort, Kentucky 40601-8204  
502-573-2382 -- 502-573-2939 fax  
<http://dlgnt1.state.ky.us/wrdc/>

Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

Final GIS & Cartographic Operations By:  
Kent Anness & Kim Prough

Data Collection & GIS Input By:  
Kentucky Area Development Districts



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#### WATER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		GLASGOW WATER COMPANY
		EDMONSON COUNTY WATER DISTRICT
		BUTLER COUNTY WATER SYSTEM INCORPORATED
		BROWNSVILLE MUNICIPAL WATER SYSTEM

**Estimated Costs - Proposed Projects, 2000-2005**

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	In \$1000	in \$1000	in \$1000	in \$1000	in \$1000
EDMONSON								
BROWNSVILLE WATER SYSTEM				110				110
EDMONSON COUNTY WATER DISTRICT	10.0	37	88	3,000				3,000
EDMONSON COUNTY TOTAL	10.0	37	88	3,110				3,198

**Estimated Costs - Proposed Projects, 2006-2020**

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
EDMONSON								-
BROWNSVILLE WATER				500				500
EDMONSON WATER DIST						4,000	800	4,800
EDMONSON COUNTY TOTAL				500		4,000	800	5,300

**PUBLIC WATER SYSTEMS**

The residents of Edmonson County are presently provided water by two systems: the Brownsville Municipal Water System and the Edmonson County Water District. In addition to serving rural Edmonson County, the Edmonson County Water District also supplies water to a small portion of Grayson, Hart, Warren and Butler counties.

**EDMONSON COUNTY WATER DISTRICT**

PWSID: ..... 0310114  
 System Type:..... COMMUNITY  
 Owner Type:..... WATER DISTRICT  
 Surface Source:..... GREEN RIVER  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... BROWNSVILLE MUNICIPAL WATER SYSTEM  
 Treatment Plant Capacity (MGD):..... 2.15  
 Percent Daily Average Production:..... 70.00  
 Total Tank Storage Capacity (gallons): ..... 2,070,000.00  
 Total Service Connections: ..... 7,757.00  
 Number of Employees:..... 16.00  
 Treatment Operator Class: .....2D  
 Distribution Operator Class:.....3A  
 Customer Rate for 1,000 Gallons:..... 4.54  
 O/M costs 1997:..... 752,437.83  
 O/M costs per Service Connection: ..... 100.07  
 Net Revenue 1997: ..... 74,294.32  
 Total Water Produced 1997 (gallons):..... 423,481,000.00  
 Water Sold 1997 (gallons): ..... 360,036,900.00  
 Unaccounted-for Water 1997 (%): ..... 11.47

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Edmonson County Water District obtains its water from the Green River and the Nolin Lake Reservoir, described in the Edmonson County Water Supply Plan has an adequate supply of raw water for future needs. The District currently serves 4,791 households in rural Allen County, 1,000 households in Hart County, 1,934 households in Grayson County, and 31 households in Warren County. The District currently has one treatment plant in Brownsville, which can produce 1,152,000 gallons per day and another plant located in Wax, Grayson County, which can produce 1,000,000 gallons per day. On an average day the Brownsville plant produces about 774,433 gallons and the Wax plant produces about 275,000 gallons per day. The storage system for the District consists of 13 tanks. The total storage capacity of the District is 2,070,000 gallons. The calculated charge for 5,000 gallons of treated water (residential usage) is \$22.71. The Edmonson County Water District has 16 employees, of whom, four are certified to operate the water treatment plant and one is certified to operate the distribution system.

**BROWNSVILLE MUNICIPAL WATER SYSTEM**

PWSID: ..... 0310706  
System Type: ..... COMMUNITY  
Owner Type: ..... MUNICIPAL  
Surface Source:  
Purchase Source: ..... GREEN RIVER  
Well Source:  
Sells Water to:  
Treatment Plant Capacity (MGD): ..... 0.00  
Percent Daily Average Production: ..... 0.00  
Total Tank Storage Capacity (gallons): ..... 200,000.00  
Total Service Connections: ..... 447.00  
Number of Employees: ..... 2.00  
Treatment Operator Class: ..... 2D  
Distribution Operator Class:  
Customer Rate for 1,000 Gallons: ..... 3.70  
O/M costs 1997: ..... Not available  
O/M costs per Service Connection: ..... Not available  
Net Revenue 1997: ..... Not available  
Total Water Produced 1997 (gallons): ..... Not available  
Water Sold 1997 (gallons): ..... Not available  
Unaccounted-for Water 1997 (%): ..... Not available

Brownsville Municipal Water System purchases its water from the Edmonson County Water District, described in the Edmonson County Water Supply Plan as an adequate supply of raw water for future needs. The water system currently serves 447 households in and around

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Brownsville. The water system currently has a contract to purchase a maximum of 85,000 gallons per day. The average daily amount of water purchased by the water system is 83,000 gallons. This accounts for less than 10 percent of the total available capacity of the source. The water system consists of one tank. The total storage capacity of the system is 200,000 gallons. The calculated charge for 5,000 gallons of treated water is \$18.50. The Brownsville Municipal Water System employs two persons, both of whom are certified water distribution system operators.

Brownsville Municipal Water System currently serves 99% of the total households in its service area. As a whole, the system does not need to expand but instead needs to upgrade and replace some of the older lines, which it currently plans to do. The water treatment plant in Brownsville is operating at 70% of its maximum capacity and many feel that this will be inadequate by the year 2020. Since the water system does not own this plant they do not pay for any upgrades directly, but they do so through the resulting water costs. Current plans are to replace the existing water tank with a 300,000-gallon tank or to refurbish the existing tank to like new. By increasing the size of the tank they can increase volume and pressure to help existing customers and to entice new customers into the area. By completing this step and by replacing some of the older lines, the water system will have an adequate supply of water and a more efficient system.

## OTHER SYSTEMS

### **MAMMOTH CAVE**

PWSID: ..... 0310940  
System Type: ..... COMMUNITY  
Owner Type: ..... FEDERAL  
Surface Source: .....  
Purchase Source: ..... GREEN RIVER VALLEY WATER DISTRICT  
Well Source: .....  
Sells Water to: .....  
Treatment Plant Capacity (MGD): ..... 0. 00  
Percent Daily Average Production: ..... 0.00  
Total Tank Storage Capacity (G): ..... Not available  
Total Service Connections: ..... 45.00  
Number of Employees: ..... Not available  
Treatment Operator Class: ..... 2D  
Distribution Operator Class: .....  
Customer Rate for 1,000 Gallons: ..... Not available  
O/M costs 1997: ..... Not available

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O/M costs per Service Connection: .....	Not available
Net Revenue 1997: .....	Not available
Total Water Produced 1997: .....	Not available
Water Sold 1997: .....	Not available
Unaccounted-for Water 1997: .....	Not available

### **KENTUCKY DIAMOND CAVERNS: CEDAR HILL**

Kentucky Diamond Caverns: Cedar Hill is located in Edmonson County. The system serves a population of 330 and has 100 service connections. The municipal system has treatment capacity of 11,000 gallons per day. The water source is ground water from wells.

### **PRIVATE DOMESTIC SYSTEMS**

About 550 people in Butler County rely on private domestic water supplies: 350 on wells and 200 on other sources.

In this highly karstic, limestone rich county, most of the drilled wells in the southern half of Edmonson County are adequate for a domestic supply. Yields as high as 50 gpm have been reported from wells penetrating large solution channels with adequate wells producing as deep as 500 feet. In the uplands of the northern half of the county less than half the drilled wells yield enough water for a domestic supply. In low-lying areas of the Nolin River, Bear Creek, and Dog Creek and their main tributaries, most wells are inadequate for domestic use with the exception of a few wells that yield enough for a domestic supply from depths of 150 feet or more.

Springs with flows ranging from a few gallons per minute to 50,000 gpm are found in the county. Minimum flow generally occurs in early fall, maximum flows in late winter.

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